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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/575,388

**Applicant(s)**

YUAN, MENGXIAO

**Examiner**

CAL EUSTAQUIO

**Art Unit**

2612

**Period for Reply** -- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 7/19/2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-17, and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**Response to Amendment**

***Claim Rejections-35 U.S.C. 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. **Claims 1, 3, 16, 17 and 19** are rejected under 35 USC 103(a) as being obvious over Miller et al. U.S. 6,420,958.

**As to claim 1**, Miller recites the claimed: An input device of an electronic combination lock, comprising: a signal device for producing combination input information and for converting said information into two groups of electrical pulse signals (FIG. 2 and col. 7, lines 34-51 recite a dial 14 connected to a rotor 24. Col. 7, lines 45-50 recite two phase lines 38 and 40 used to determine the direction of the rotation of the rotor 28), *said signal device including a coder* (col. 16, lines 63-67 and 1-13, dial 14, "reversal of dial 14 of the lock 10 is used to detect that a number is to be entered into the combination element storage locations of the

microprocessor 44); a measurement and control device connected to said signal device for measuring the electrical pulse signals outputted from the signal device, deciding the order of the electrical pulse signals and calculating correspondingly such that said signals are converted into character sequences including the combination elements, and deciding whether said current combination elements are confirmed to be inputted or not (col. 18, lines 34-53) and deciding whether the input of all the combination elements is completed or not (as above and col. 7, lines 52-61, "microprocessor 44." The confirmation of the inputted combination is recited in FIG. 10, 404, col. 17, lines 63-67, and col. 18, lines 1-5, a check is made as to whether the numbers have been entered..."); a confirmation device connected with said measurement and control device and used for producing a conformation signal for inputting the combination elements to indicate that the input of the combination element is confirmed (see above); and a display device connected with said measurement and control device for displaying said character sequences and for displaying prefabricated prompt information in a rolling and refreshing manner by the driving of said measurement and control device (Col. 11, lines 43-56 recite the system providing the user a prompt while col. 2, lines 15-45, recite combination numbers being entered through dial rotation),

Except for the claimed: The input device of the electronic combination lock as described in **Claim 1**, *wherein said confirmation device is a switch device, an electrical signal produced when it is closed allows said measurement and control device to confirm the current combination element displayed by said display device as a part of the input combination.* Miller, as recited in FIG. 10, 404, and col. 17, lines 63-67, includes the claimed "confirmation device." However, Miller doesn't specifically recite an electrical signal produced a closed switch to confirm the

current combination element. However it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller the claimed "switch." FIG. 10 is a flow chart that represents a basic logical operation. The logical function provided is a direct correlation to the claimed switching function because logic circuits are switching circuit circuits. Therefore, one of ordinary skill in the art would have had a likelihood of success in substituting the recited logical function with the claimed switch which would render the claim obvious.

**As to claim 3**, Miller recites the claimed: The input device of the electronic cipher combination lock as described in **Claim 1**, wherein said measurement and control device is also used for deciding whether during a given timing period which starts each time when a signal is produced by said confirmation device, the timing period expires or not, and if the timing period expires, then it decides that the input is during overtime. FIG 9 and col. 17, lines 14-23 recite exceeding a dial stopped period exceeding 220 ms.

**As to claim 16**, Miller recites the claimed: A method for inputting a combination of a combination lock, wherein it comprises the steps of:

a. receiving the rotation information of the dial or roller via a signal device and converting it into two groups of electric pulse signals, *said signal device including coder*;

b. measuring, deciding and calculating said two groups of electric pulse signals by a measurement and control device, and further converting them into element sequence constituted by the combination;

c. displaying said character sequences including the combination elements and the preset information by a display device, wherein the rolling refresh rate for displaying the character sequences including the code elements is a function of the signal frequency of said two groups of electric pulse signals, the element sequence of the combination is rolling refreshed in an ascending order or descending order manner which corresponds to the rotation direction and angle of said dial or roller (col. 2, lines 43-52, "angle");

d. when the input of the current combination element is confirmed, a confirmation signal for inputting the cipher combination element is produced by a confirmation device *wherein said confirmation device is switch device, an electrical signal produced when it is closed allows said measurement and control device to confirm combination element displayed by said display device as a part of the input combination;*

e. after said confirmation signal has been detected by the measurement and control device, the input of the current combination element is confirmed; and

f. the measurement and control device further decides whether the input of all the combination elements is completed or not.

See rejection of **claim 1**.

As to **claim 17**, Miller recites the claimed: The method for inputting a combination as described in **Claim 1**, wherein said measurement and control device is also used for deciding whether during a given timing period which starts each time when a signal is produced by said

confirmation device, the timing period expires or not, and if the timing period expires, then it decides that the input is during overtime. See rejection of **claim 3**.

**As to claim 19**, Miller recites the claimed: The input device of the electronic combination lock as described in **Claim 1**, wherein a current combination element is only part of the final input combination. Miller, col. 10, lines 62-67, col. 11, lines 1-67, and col 12, lines 1-56 recites an electronic combination lock in which at least two sets of combinations are used to enable the combination lock.

3. **Claim 5** is rejected under 35 USC 103(a) as being obvious over Miller et al. U.S. 6,420,958 in view of Watanabe, U.S. 2001/0028316, Gossner, U.S. 2,574,967 and Davis, U.S. 2004/0007032.

**As to claim 5**, Miller recites the claimed: The input device of the electronic cipher code combination lock as described in **Claim 1**, wherein, said signal device *further* comprises: a panel body (FIG. 1, element 12), a dial which is installed on said panel body and can be rotated freely (14 and 16), a drive shaft fixed at the center of said dial (22), *wherein the code* is a rotating coder coupled with said driven gear (FIG. 2, elements 28 and 32) measurement and control device is a programmed microcontroller (computer 44); said display device is an information display screen;

Except for the claimed: a set of driving gears installed on said drive shaft, a driven gear which engages with said driving gears; and said switch device is a photoelectric switch, wherein said microcontroller, coder, information display screen and photoelectric switch are provided on the same circuit board, said circuit board is provided within said panel body, and said

microcontroller is connected electrically with said coder, information display screen and photoelectric switch respectively.

As to the claimed: said switch device is a photoelectric switch, Miller describes a rotor 28 coupled to a dial drive, the rotor 28 providing pulses to coils 28, the cooperative elements which form a magnetic pickup to detect the rotation of a shaft. However, Miller doesn't recite using a photoelectric switch. In the same art of detecting rotary machine operations, Miyakita, FIG.3 and col. 5, lines 38-45 and recites an embodiment of determining positional information of a shaft, which is shown in FIG. 2, suggesting that photo-electric pickups as well as magnetic pickups may be used interchangeably. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller the photoelectric motion detector recited in Watanabe to produce a rotary lock system that utilizes a photoelectric motion sensor instead of the magnetic pickup found in Miller. Each of the above recitations are substituted components having identical functions were known in the art, therefore, One of ordinary skill in the art would have known/recognized substituting one known element for another would have yielded the predictable combination.

As to the claimed: a set of driving gears installed on said drive shaft, a driven gear which engages with said driving gears, Miller, FIG. 1 and 2, recite a rotary input knob coupled to a shaft. Miller doesn't recite using a set of driving gears installed on the drive shaft. In the same art of locking technology Gossner, FIG. 3 and 4, recites a set of gears 21 and 22 used in padlock with a key 23 providing the prime mover for the set of gears. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller and



Miyakita the gearing system recited in Gossner to produce a lock that uses gears. Using gears in a padlock to provide lock operations is not new in the art and one of ordinary skill could have applied the known gearing technique in the same way to the padlock found in Miller and the results would have been predictable to one of ordinary skill in the art.

As to the claimed: wherein said microcontroller, coder, information display screen and photoelectric switch are provided on the same circuit board, said circuit board is provided within said panel body, and said microcontroller is connected electrically with said coder, information display screen and photoelectric switch respectively, Miller, Miyakita, and Gossner fail to recite providing a circuit board to mount the above respective components. In the same art of electronic lock devices, Davis, [0039] and FIG. 11, recite mounting components of a padlock onto a circuit board 32.

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller, Miyakita, and Gossner the circuit board mounting of components found in Davis to produce a padlock which uses a circuit board to mount components. The use of circuit boards is known in the art for connecting components together and done of ordinary skill would have had a likelihood of success in providing a combination that includes circuit board technology for making a circuit.

4. **Claims 6 and 9** are rejected under 35 USC 103(a) as being obvious over Miller et al. U.S. 6,420,958 in view of Watanabe, U.S. 2001/0028316, Gossner, U.S. 2,574,967 and Davis, U.S. 2004/0007032 and Hyatt, U.S. 5,604,489.

**As to claim 6**, Miller, Watanabe, Gossner, and Davis recites except for the claimed: The input device of the electronic combination lock as described in **Claim 5**, wherein the outer edge of said dial is a circular skirt-like fringe, the position of said photoelectric switch corresponds to the skirt-like fringe of said dial, when said dial is depressed, the light transmitted to the photoelectric switch is blocked by said skirt-like fringe, thereby a signal is produced by said photoelectric switch. Miller recites a combination lock but doesn't recite the claimed structure shown above. In the same art of locking systems, Hyatt, FIGs 1, 2, col. 2, lines 47-67 and col. 3, lines 1-36, recites a combination lock where a user detects clicking as a knob 30 is rotated. As each character is selected, the user depresses the dial which allows character input to the system. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller the dial drive system of Hyatt to provide a combination that meets the claimed limitations. Although Hyatt does not provide a detailed rendition of the claimed electro-mechanical elements, Hyatt provides a structure that operates in the same fashion as the claimed limitation. Depressing the knob in Hyatt is analogous to the signal produced by the photoelectric switch. Therefore, one of ordinary skill in the art could have substituted the known element found in Hyatt for the dial mechanism found in Miller, Watanabe, Gossner, and Davis, and the results of the substitution would have been predictable.

**As to claim 9**, Miller, Watanabe, Gossner, and Davis recites except for the claimed: The input device of the electronic combination lock as described in **Claim 5**, wherein a concentric circle plane gullet is provided on the internal end face of *each of* said *set driving gears*, and a blind hole is provided on said plane gullet at a position corresponding to said panel body, and a steel ball and a spring are installed in said blind hole, said steel ball contacts and matches with

the concentric circle plane gullet of said driving gear under the action of the spring. Miller recites a combination lock but doesn't recite the claimed structure shown above. In the same art of locking systems, Hyatt, FIGs 1, 2, col. 2, lines 47-67 and col. 3, lines 1-36, recites a combination lock where a user detects clicking as a knob 30 is rotated. As each character is selected, the user depresses the dial which allows character input to the system. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller, Watanabe, Gossner, and Davis the dial drive system of Hyatt to provide a combination that meets the claimed limitations. Although Hyatt does not provide a detailed rendition of the claimed mechanical elements, Hyatt provides a structure that operates in the same fashion as Miller. Depressing the knob in Hyatt is analogous to the reset spring. The steel ball and concentric circle plane gullet of the central driving gear is analogous to the "clicking" found in Hyatt. Therefore, one of ordinary skill in the art could have substituted the known element found in Hyatt for the dial mechanism found in Miller, and the results of the substitution would have been predictable.

5. **Claim 4** is rejected under 35 USC 103(a) as being obvious over Miller et al., U.S. 6,420,958 over Rossow et al. U.S. 2002/0087245 and Laurie, U.S. 2002/0157437 and Hyatt, U.S. 5,604,489.

**As to claim 4**, Miller recites except for the claimed: The input device of the electronic cipher code combination lock as described in **Claim 1**, wherein the preset information displayed by said display device is indicated by symbols, the code setting state is indicated by a symbol having a key shape (col. 8, lines 6-11, key symbol used for combination change mode).

Except for the claimed: wherein the close and open states of the lock are indicated by a symbol having a padlock shape, the time at which the lock is opened on time or is delayed to be opened is indicated by a symbol having a clock shape, and low power of battery is indicated by a symbol having a battery shape, and the confirmation states of the respective parts of the combination are indicated in turn by the remaining dot symbols.

As to the above claimed: wherein the close and open states of the lock are indicated by a symbol having a padlock shape, and low power of battery is indicated by a symbol having a battery shape, Miller, while recites providing a key symbol to tell a user a combination code change is about to occur. Miller utilizes symbols to indicate to a user when a condition is occurring. Miller doesn't recite the above specific indications using the above symbols. In the same art of display warning symbols, Rossow recites a user interface for providing warnings to a user regarding the following functions: [0061], [0073], FIG. 7A, 7B, 9A, and FIG. 5B recite a low battery voltage indicator, and a lock to indicate a locked and unlock state. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller the display symbolisms recited in Rossow to provide a lock display that includes the above functions. The use of such displays are not new in the art of locking security and one of ordinary skill would have had a likelihood of success in including these known symbols into a system that notifies a user if certain functions are being enabled.

As to the claimed: the time at which the lock is opened on time or is delayed to be opened is indicated by a symbol having a clock shape, Miller and Rossow, as recited above, includes using symbols to tell a user if a lock is open or closed. However, neither recites telling a user at

what time a lock is opened on time with a clock shape. In the same art of security functions, Laurie, [0017] recites a locking system in which a display is showing wherein a present date and a future date is displayed. Once both dates equal each other, the locking system opens. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller and Rossow the display system recited in Laurie to produce a system that displays when a lock is delayed to be opened. One of ordinary skill would have had a likelihood of success in providing such a combination to warn a user when the lock is about to be opened. Furthermore, although Laurie doesn't show a "clock symbol" to provide the warning, Laurie does provide a set of dates which the difference tells the user how much time is left before the lock opens, which fulfills the claimed the "clock symbol." Also, the "clock symbol" does not render the claimed patently distinguishable from the prior art because the displays solve the same problem of a user determining when the lock is about to be opened. The system, therefore, is deemed to be a design choice.

As to the claimed: and the confirmation states of the respective parts of the combination are indicated in turn by the remaining dot symbols, Miller recites a circuit for confirming the input of a combination. Miller doesn't recite confirming parts of a combination using remaining dot symbols. In the same art of combination lock systems, Hyatt, FIG. 1, col 1 lines 64-67, col. 2, lines 1-6, and col. 3, lines 12-36, recite a combination lock that provides a digital output 40. A blocking character is used to show the user that an entry has been made into the system, with the remaining spaces shown and the subsequent entry being displayed. As each character is selected, a blocking character is displayed. This operation has the effect of allowing the user to determine what remaining inputs are needed to complete a code input sequence. Furthermore, Hyatt recites

that nay numeral or alphanumeric symbol can be used as the blocking symbol. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller the code input scheme recited in Hyatt to produce a display system that informs a user of the remaining characters needing entry into the system through the use of character symbology. As recited in Hyatt, the use of this scheme is not new in the art of locking systems and one of ordinary skill would have had a likelihood of success in providing this option to produce an improve lock system that meets the claimed invention. Furthermore, although Hyatt uses symbols and numerals instead of remaining dot symbols, the use of dots does not make the claimed invention patently distinguishable from the prior art and therefore, the use of dots instead of other symbols to accomplish the claimed task is deemed to be a design choice.

6. **Claim 7** is rejected under 35 USC 103(a) as being obvious over Miller et al. U.S. 6,420,958 over Gartner, U.S. 6,738,344, Nelson, 4,942,329, Greenheck, 6,547,289, and Flory et al. U.S. 2004/0182120.

**As to claim 7**, Miller recites the claimed: The input device of the electronic combination lock as described in **Claim 5**, ...and said panel body further comprises:

a display window, the shape and size of which matches with the shape and size of said information display screen, and which forms an oblique angle together with said information display screen for viewing effectively the displayed information (FIG. 1 col. 7 recites a display window shown on the lock);

Except for the claimed: a display window... which forms an oblique angle together with said information display screen wherein the upper part and lower part of said panel body are hunched to be ear-edge shaped, and said panel body further comprises:

grooves provided in back of said ear edge and matched with the fingers; a display window, the shape and size of which matches with the shape and size of said information display screen, and which forms an oblique angle together with said information display screen for viewing effectively the displayed information; and

a guiding hole provided at the display window side of said panel body for inserting an emergency key.

As to the claimed “oblique angle,” Miller, while reciting a display window used with a combination lock, fails to show the claimed oblique angle display window. In the same art of locking devices, Gartner, FIG. 2, shows a keypad equipped locking handle. The keypad is positioned in an oblique manner. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to position the display found in Miller in the manner of displaying the keypad found in Gartner to produce a display device placed at an oblique angle. One of ordinary skill in the art would have recognized that applying the known technique of placing a display in an oblique angle would have yielded predictable results and resulted in an improved system.

As to the claimed “wherein the upper part and lower part of said panel body are hunched to be ear-edge shaped, and said panel body further comprises: grooves provided in back of said

ear edge and matched with the fingers," Miller, while reciting the above panel body, doesn't recite the above ear-edge shaped portions nor the grooves. In the same art of door handle pullers, Nelson, FIG. 1, recites a drawer slide with a drawer pull. However the drawer pull fails to recite an ear edge shape as well as the grooves. Greenheck recites, in FIG. 1, a latch mechanism in which a user pulls on grip 38 to engage the latch. The latch is shown traversing lengthwise across cabinet frame 14. The surface length accounts for additional surface area for which a user can engage the grip, which is analogous to the upper and lower claimed ears. The grip terminates with a lengthwise bead 42, which is analogous to the claimed finger grooves. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller the door handle opening devices recited in Nelson and Greenheck. The use of the pulls recited in Nelson and Greenheck are not new in the art and each provides ways to provide a user with an efficient way to pull on door handles. Furthermore, although the claim recites an upper and a lower ear-edge shaped portion, the long handle provided above increases the amount of area a user can grasp the handle along any portion of the length of the handle. Also, unless the specification recites a reason for providing an upper and a lower ear-shaped portion, the above recited combination meets these limitations and the use of an upper and lower ear-shaped portion is deemed to be a design choice.

As to the claimed: a guiding hole provided at the display window side of said panel body for inserting an emergency key, neither Miller, Gartner, Nelson, nor Greenheck provide the above. In the same art of combination locks, Flory, FIG. 1 and [0025] provides a multi-mode combination lock in which a user can either open the lock using a knob or inserting a key. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to



include into Miller, Gartner, Nelson, and Greenheck the combination lock and key lock shown in Flory to produce a lock that utilizes the claimed limitations. The motivation would be, according to Flory, [0025], to improve security of a single type of padlock. Furthermore, the structure is not identically recited in Flory in the manner claimed. However, the specification does not specifically disclose the reasons why the emergency key configuration is claimed in the above manner. Therefore, the placement of the guiding hole on the panel body is not considered to be patently distinct from the prior art and are deemed to be a design choice.

7. **Claim 8** is rejected under 35 USC 103(a) as being obvious over Miller et al. U.S. 6,420,958 over Watanabe, U.S. 2001/0028316 and Gossner, U.S. 2,574,967 and Davis, U.S. 2004/0007032 and Hyatt, U.S. 5,604,489.

**As to claim 8**, Miller, Watanabe, Gossner, and Davis fail recite the claimed: The input device of the electronic combination lock as described in **Claim 5**, wherein it further comprises a rest spring installed within an internal axial hole provided on said drive shaft of said dial. Miller recites a knob input for a combination lock. As each entry is inputted to the system, a corresponding character on a display is shown. Miller doesn't recite using a reset spring provided on a drive shaft of said dial. In the same art of lock systems, Hyatt recites a combination lock system in which, as in FIG. 1, 2, and col 2, lines 59-67, and col. 3, lines 1-2, a rotating dial is axially displaced (pushed in) to enter successive character inputs to a lock system. Implicit in Miller as that as each entry is made, the dial returns is biased to a normally "pushed out" position until the next entry is made. Therefore, a means to bias the knob to this position meets the claimed "reset spring."

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller the knob found in Hyatt to produce a system that has a means of allowing a dial to be pushed in and pushed out in the manner claimed. The use of such a means is shown in Hyatt and substituting such a feature into the combination of Miller, Watanabe, Gossner, and Davis would provide an improved system.

8. **Claim 10** are rejected under 35 USC 103(a) as being obvious over Miller et al. U.S. 6,420,958 over Aguilar et al. U.S. 2001/0004584.

**As to claim 10**, Miller recites except for the claimed: The input device of the electronic combination lock as described in **Claim 1**, wherein, the signal device is a roller device, it *further* comprises: a roller, and an elastic bracket for supporting said roller, *wherein the coder which is coaxial with the roller*; said measurement and control device is a programmed microcontroller; said display device is an information display screen; said switch device is a microswitch provided below the shaft extension of the roller, wherein said microcontroller is connected electrically with said coder, information display screen and microswitch respectively.

Miller, as in the rejection of **claim 1**, recites a signal device that includes the above limitations, with the exception of the signal device being a roller device and a switch device located below the shaft extension of the roller and the coder coaxially displaced with the roller. In the same art of roller switches, Aguilar, FIG. 1 and [0004], recites a roller switch [0007] including a coder. In another embodiment shown on FIG. 3, [0029], an encoder is alongside the switch, which meets the “coaxial” encoder claimed. The user scrolls up and down to determine what item from a menu should be selected and upon selecting an item, the user depresses the

roller switch, which meets both the claimed roller device and the microswitch. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller that alternative embodiment of the use of a roller switch to provide a function and structure that meets the claimed limitations. Aguilar contains a roller switch that is different from the rotary switching feature found in Miller that has been improved in the same way as the claimed invention, however, one of ordinary skill in the art could have applied the known "roller switch" technique in the same way to the "rotary switch" device found in Miller and the results would have been predictable to one of ordinary skill in the art.

9. **Claim 11** are rejected under 35 USC 103(a) as being obvious over Miller et al. U.S. 6,420,958 over Aguilar et al. U.S. 2001/0004584 and Hyatt, U.S. 5,604,489.

**As to claim 11**, Miller recites the claimed: The input device of the electronic combination lock as described in **Claim 10**, wherein, said information display screen is used for displaying 1-bit or 2-bit number in a circularly rolling manner of an ascending order or descending order according to the direction and angle of the rotation of said roller; said microswitch is used for that when the roller is depressed, the microswitch is actuated by the shaft extension of said roller, thereby the rolling display of said information display screen is stopped, so that the number displayed currently is confirmed as a part of the combination; and said elastic bracket is used for resetting said roller after releasing the depressed roller.

Miller, in the rejection of **claim 1**, recites the use of a display screen. The screen is used to tell the user the direction of the combination input as well as a numerical value. Miller doesn't recite if the displayed numbers are in one or two bit formats. However, it would have been

obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller the claimed display of one or two bit numbers. Although the claimed invention recites these limitations, the specification doesn't recite any reasons for the use of displaying the one or two bit numbers in that manner. Therefore, the displaying of one or two bit numbers is not considered to be patently distinct and the use of the claimed limitations is deemed to be a design choice which is fulfilled by the displayed output found in Miller.

As to the claimed: "said microswitch is used for that when the roller is depressed...and said elastic bracket...", Miller recites providing a rotary knob to provide an input to a combination lock system. Miller does not provide a microswitch used with a roller to stop the rolling display while the number displayed is confirmed. In the same art of locking and displaying systems, Hyatt, col. 3, lines 14-36, recites a rotary knob that upon a user reaching a desired code entry, depresses the knob to cause the arrived-at-number to be inputted to the system. Aquilar, [0004], recites a rotating roller encoder which is used to scroll through a displayed menu. Upon reaching the desired selection, the user depresses the roller knob to enter the selected item for processing in the system's processor. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller the rotating knob input of Hyatt and the roller knob input system of Aquilar to produce a roller knob input system that allows a user to select a desired combination input such that the display is stopped and the current number entered is confirmed in which a user, after pressing the roller, the roller is biased to return to its original position for a subsequent switch depressing. The use of the above structures are different embodiments of combination lock input features known in the art and one of ordinary skill would have had a likelihood of success in incorporating these features to

provide a predictable combination lock. Furthermore, although Aquilar does not specifically recite the claimed "elastic bracket" to provide a resetting of the roller, Aquilar provides a structural means that provides the same result of the claimed "elastic bracket" because a reset means to return the knob to its normally biased position is recited.

10. **Claims 12, 13 and 14** are rejected under 35 USC 103(a) as being obvious over Miller et al. U.S. 6,420,958 over Aquilar et al. U.S. 2001/0004584 and Gartner, U.S. 6,738,344

**As to claim 12**, Miller and Aquilar recite the following claimed limitations with the exception of the structure specifically involving the handle: A handle of the combination lock, wherein said handle is hollow and comprises:

an input device of the electronic combination lock as described in **Claim 10**, which is fixed within a cavity of said handle;

a first window provided on the surface of said handle, the first window corresponds to said roller may be dialed and depressed,;

a second window provided on the surface of the handle, the second window corresponds to said information display screen thereby the contents displayed may be viewed,; and

a rotating shaft fixed within the handle with a hole used for the wires to be passed through provided therein,

wherein the input device of the electronic combination lock is connected with combination identification device of the combination lock and a power supply which are installed inside the core mechanism of the lock or installed at other position inside the door via the wires.

As to the claimed: an input device of the electronic combination lock as described in **Claim 10**, which is fixed within a cavity of said handle; Miller and Aquilar recites a combination lock that is provided for inside the confines of a panel, as in the rejection of **claim 10**. Miller doesn't recite the combination lock provided for in the cavity of a handle or any portion thereof. In the same art of electronic combination locks, Gartner recites a combination lock disposed within a door handle, as in FIG. 2, with a battery 25 used to power the lock. It would have been obvious for one of ordinary skill at the time of the claimed invention to include into Miller a door handle embodiment of a combination lock. Substituting one known embodiment into another would provide for a system that provides the claimed improvement.

**As to claim 13**, Miller, Gartner, and Aquilar recite the claimed: A handle of the combination lock, wherein said handle is hollow and comprises:

a handle body comprises a rotation fixed shaft fixed therein, and a hole provided inside said rotation shaft for allowing the connection wires to be passed through;

a panel, the input device of the electronic combination lock as described in **Claim 10** is installed inside the panel, a first window, which corresponds to said roller thereby said roller may be dialed and depressed, and a second window, which corresponds to said information display screen thereby the contents displayed may be viewed, are provided on said panel; and

a transparent window cover provided on a plane on which there is said second window, wherein a hollowed region, which has the size and shape matching with that of said panel, is provided on the front surface of the handle body, thereby said panel can be embedded therein, and

said handle of the combination lock is connected with a combination identification device and a power supply of the combination lock, which are installed inside the core mechanism of the lock or installed at other positions inside the door, via the wires. See rejection of **claim 12**. Furthermore, as in the rejection of **claim 12**, the claimed limitations recite an arrangement of parts which would be otherwise identical to the embodiment in **claim 12**. Accordingly, such a rearrangement would not be deemed patently distinct from the prior art if the arrangement of parts establishes unexpected results:

*In re Japikse*, 86 USPQ 70 (CCPA1950) In the brief of the Solicitor for the Patent Office it is pointed out that the claim reads on *Cannon* except as to the final limitation reading "means disposed in alignment with said opening for contact by said depending means to start the pressing operation of said hydraulic press." As to that limitation it was held that there would be no invention in shifting the starting switch disclosed by *Cannon* to a different position since the operation of the device would not thereby be modified.

As to **claim 14**, Miller, Gartner, and Aquilar recite except for the claimed: A handle of the combination lock, wherein it comprises:

a handle body;

a handle base with the microcontroller and information display screen of said input device of the electronic combination lock described in **Claim 10** installed therein, and a second window, which corresponds to said information display screen thereby the displayed contents may be viewed, is provided on the front face of the base; and

a panel, a roller device of the input device of the electronic combination lock as described in **Claim 10** is installed inside the panel, a first window having the size and shape matching with that of the roller thereby said roller may be dialed and depressed is provided on the surface of said panel,

wherein said handle is hollow and cavity matching the size and shape of said panel is provided on the front surface of the handle, thereby said panel can be embedded therein, and

said input device of the electronic combination lock is connected electrically with a combination identification device and a power supply of the combination lock which are installed inside the core mechanism of the lock or installed at other positions inside the door via the wires.

See rejection of **claim 12**. Furthermore, as in the rejection of **claim 12 and 13**, the claimed limitations recite an arrangement of parts which would be otherwise identical to the embodiment in **claim 12**. Accordingly, such a rearrangement would not be deemed patently distinct from the prior art if the arrangement of parts establishes unexpected results:

*In re Japikse*, 86 USPQ 70 (CCPA1950) In the brief of the Solicitor for the Patent Office it is pointed out that the claim reads on Cannon except as to the final limitation reading "means disposed in alignment with said opening for contact by said depending means to start the pressing operation of said hydraulic press." As to that limitation it was held that there would be no invention in shifting the starting switch disclosed by Cannon to a different position since the operation of the device would not thereby be modified.

11. **Claim 15** is rejected under 35 USC 103(a) as being obvious over Miller et al. U.S. 6,420,958 over Aquilar et al. U.S. 2001/0004584 and Gartner, U.S. 6,738,344, and Remington et al. U.S. 4,495,540.

As to **claim 15**, Miller, Aquilar, and Gartner recite except for the claimed: A panel of a combination lock for chests and bags, wherein the panel of the combination lock for the chests and bags is fixed on the external surface of the chest body, it comprises:

an input device of the electronic combination lock as described in **Claim 10**, which is fixed within said panel;



a first window provided on the surface of said panel, which matches the size and shape of said roller thereby said roller may be dialed and depressed; and

a second window provided on the surface of said panel, which matches the size and shape of said information display screen and having a transparent window cover provided thereon thereby the displayed may be viewed, and

wherein said input device of the combination lock is connect with a combination identification device and a power supply of the combination lock which are installed inside the chest body via the wires.

As in the rejection of **claim 12**, the combination of Miller, Gartner, and Aquilar recites a combination that includes the above limitations except for references dealing with the claimed "chests and bags." In the same art of locking systems, Remington, FIG. 1 and col. 2, lines 33-58, recites an electronic locking system used on a briefcase. It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include into Miller, Gartner, and Aquilar the electronic lock system of Remington to produce a locking system that includes embodiments shown above within a luggage type platform. The above are known components used in the field of securing and locking devices and one of ordinary skill would have a likelihood of success in replacing the above elements into a briefcase or any other luggage item, as is known in the art to produce an improved luggage that meets the claimed invention.

***Response to Arguments***

**12.** Applicant's arguments with respect to **claims 1 and 3-17**, filed 6/5/2009 have been fully considered but they are not persuasive. In particular, Applicant's argument alleges Miller fails to teach

or suggest: a signal device for producing combination input information and for converting the information into two groups of electrical signals, where the signal device includes a coder.

Furthermore, the Applicant's argument alleges Miller fails to teach a confirmation device being a switch device. The Examiner respectfully disagrees.

**13.** As to the assertion that Miller fails to teach a coder, Miller, col. 16, lines 63-67 and 1-13, dial 14, recites a "reversal of dial 14 of the lock 10 is used to detect that a number is to be entered into the combination element storage locations of the microprocessor 44." The claimed "coder" as described in the Applicant's specification, [0054] with respect to a function of the coder is disclosed as having "two code signal output terminals, when the dial rotates in a clockwise direction, the electrical pulse signal 11 outputted from the first output terminal keeps ahead; when the dial rotates in a counterclockwise direction, the electrical pulse signal 12 outputted from the second output terminal keeps ahead." Broadly interpreted, the "coder" is an element that provides an electrical or other output as a result of some input stimuli responsive to mechanical stimuli. Miller provides this feature differently from the invention but nevertheless, the features meet the claimed limitation of a "coder."

**14.** As to the assertion that Miller fails to teach a confirmation device that includes a switch device, Miller provides for a mechanism that meets the claimed "switch." FIG. 10 is a flow chart that represents a basic logical operation. The logical function provided is a direct correlation to the claimed switching function because logic circuits are switching circuit circuits.

**15.** As to the assertion that Miller utilizes a "step motor" while the present invention does not is immaterial to the patentability of the claim, especially if the Applicant's stated advantages are not part of the claim. The same reasoning applies to the Applicant's argument regarding the function of the "confirmation device." Miller, as described in the Applicant's response, found on page 11, 1<sup>st</sup>

paragraph, describes a "confirmation function" which the description fails to distinguish features between the reference and the claimed invention. Any differing features that distinguish the references from the invention must be found in the claim. See *In re Hiniker* "the name of the game is the claim," 150 F.3d 1362, 1369 (Fed. Cir.1998).

**16.** With respect to the Applicant's arguments regarding remaining **claims 5, 9, 10, 12, and 15-17**, the Examiner defers further arguments with regards to these claims since responses to these claims hinge on the response to the arguments given with respect to independent **claim 1** and its counterpart, **claim 16**.

#### ***Conclusion***

**17.** Applicant's failure to overcome the rejections and applicant's amendment necessitated the new ground(s) of rejection are presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

**18.** A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **CAL EUSTAQUIO** whose telephone number is (571)270-7229. The examiner can normally be

reached on 8am-5pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin C. Lee, can be reached at (571) 272-2963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.  
/C. E./

Examiner, Art Unit 2612

/BENJAMIN C. LEE/

Supervisory Patent Examiner, Art Unit 2612